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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/811,877

03/30/2004

Hirofumi Higuchi

11-244

2500

23400

7590

03/21/2005

POSZ LAW GROUP, PLC  
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RESTON, VA 20190

EXAMINER

KWOK, HELEN C

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/811,877

**Applicant(s)**

HIGUCHI ET AL.

**Examiner**

Helen C. Kwok

**Art Unit**

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 3-7, 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date March 30, 2004
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Objections***

2. Claims 1-11 are objected to because of the following informalities. Appropriate correction is required.

In claim 1, line 9, what is the word "their" referring to?

In claim 2, line 5, the word – input – should be inserted before the word "gain" to provide proper antecedent basis and for clarity.

In claim 3, line 4, the phrase "the distance" should be changed to – a distance --.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, line 4, the phrase "the gain determining resistor" lacks antecedent basis. In lines 5-6, the phrase "the analog input gain" lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,817,244 (Platt).

With regards to claims 1-2, Platt discloses a MEMS structure comprising, as illustrated in Figures 1-5, first and second sensor units each having a vibrator 12,13 oscillating in a predetermined standard vibrating direction; sensing waveform generating section 22,23 that detects an angular velocity oscillatory component generating in an angular velocity sensing direction differentiated from the standard vibrating direction when an angular velocity is applied to the vibrator and also generates an angular velocity sensing waveform based on the angular velocity oscillatory component such that the first and second sensor units causing the vibrators to oscillate with mutually opposite phases in the standard vibrating direction so as to cause respective sensing waveform generating sections to generate first and second angular velocity sensing waveforms 54,56 having mutually inverted phases; differential waveform detecting means includes a differential amplification circuit 70 for obtaining a differential waveform between the first angular velocity sensing waveform and the second angular velocity

waveform so as to cancel in-phase component acting to respective vibrators of the first and second sensor units in the angular velocity sensing direction; and input gain adjusting means includes an analog input gain adjusting circuit 58,60 for adjusting at least one of an input gain of the first angular velocity sensing waveform and an input gain of the second angular velocity sensing waveform entered into the differential waveform detecting means so as to reduce a residual in-phase component of the differential waveform. (See, column 2, line 61 to column 5, line 60).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,817,244 (Platt) in view of U.S. Patent 5,220,833 (Nakamura).

With regards to claims 8 and 9, Platt does not disclose a phase adjusting means and a proximity noise oscillatory component within a frequency region ranging to  $\pm 50\%$  about the driving frequency. Nakamura discloses an angular rate sensor gyroscope comprising, as illustrated in Figure 9, a phase adjusting means 64 for adjusting an input waveform phase. (See, column 5, lines 36-50). It would have been obvious to a person of ordinary skill in the art at the time of invention to have readily recognize the

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advantages and desirability of employing the phrase adjusting means as taught by Nakamura to the device of Platt to eliminate the slight phase shift produce between the signal of the electrostatic capacity and the signal of the Coriolis force to be able to obtain more accurate and better measurements. Furthermore, although the references do not specify such parameter as in the claim for the frequency region ranging to  $\pm 50\%$  about the driving frequency. However, to have set such test characteristics in the claim is considered to have been a matter of design choice that would have been obvious to an artisan in the art at the time of invention due to experimentation without departing from the scope of the invention.

#### ***Allowable Subject Matter***

9. Claims 3-7 and 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

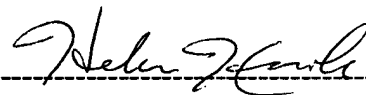
The references cited are related to MEMS sensor having a first and second sensor units each having a vibrator.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen C. Kwok whose telephone number is (571) 272-2197. The examiner can normally be reached on 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Helen C. Kwok  
Art Unit 2856

hck  
March 16, 2005